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ZOÖLOGY.[1]

LEATHER TURTLE.—*Apropos* of the article on the "Leather Tortoise," in the October NATURALIST, perhaps the following may be of interest to the author.

A few years ago, in looking over the papers of Col. Richard Varick, the first mayor of the City of New York, in search of autographs and documents relating to the Revolutionary War, I came across a small circular, about six to seven inches in size, printed on the rough, unsized paper used by our forefathers, and of which the following is a copy of the subject matter:

"The dimensions of the *Testudo coriacea*, or leather tortoise, caught by Samuel Coon, one of the branch pilots of New York, on board the *Young Pilot*, by way of Sandy Hook, on the 27th Sept., 1811, and purchased by John Scudder, proprietor of the American Museum, No. 24 Chatham St., are as follows, taken under the eye of Dr. Mitchell, professor of natural history:

	Feet.	Inches.
Length from extremity of the snout to the end of the tail......	7	6
Length of the buckler between the neck and tail..............	5	8
Girth of the body..	8	0
Circumference of the buckler................................	13	2
" " neck	3	5
" of fore fin above the joint......................	2	5
" " " at the joint........................	2	8
Length of the fore fin......................................	3	9½
" " head and neck from the buckler........................	1	7½
Distance between the extreme tips of the two fore fins.........	8	5
Breadth of the buckler......................................	3	10½
Length of the hinder fin....................................	2	1
Circumference of the hinder fin.............................	2	4½
Distance between the extreme tips of the two hinder fins.......	5	5
Length of the tail..	1	0
Circumference of the tail in the middle......................	1	5
Projection of the tail beyond the buckler....................	0	4
Width of the mouth across from corner to corner.............	0	10
Distance from the upper to the lower extremity of the jaws when the mouth was wide open...........................	0	9½
Circumference of the eye-ball after extraction from the socket..	0	5½

"His weight, when taken, was supposed to be rising 900 lbs., but from the loss of blood previous to his death, he weighed only 800 lbs."

This little circular, if thus it may be styled, is a very neat and modest one, and was, perhaps, printed by the proprietor of the museum to call attention to the specimen. You will perceive that this capture antedates the one you mention as having been made in Massachusetts bay by thirteen years.—*W. R. Gerard.*

THE CHIPPING VERSUS THE EUROPEAN SPARROW.—During the last two seasons the much dreaded European cabbage worm (*Pieris rapæ*) has been infesting the cabbage in this vicinity.

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[1] The departments of Ornithology and Mammalogy are conducted by Dr. ELLIOTT COUES, U. S. A.

Several years earlier came that other pest, the European sparrow (*Passer domesticus*), and has pretty thoroughly driven away most of the other species of birds that are usually common about dwellings. On my own premises, instead of the cheerful music of the wren, robin and cat-bird, which formerly helped to make the surroundings attractive, I am compelled to be annoyed by miserable squeaks. This season a cabbage patch in my garden became thoroughly infested by the worms; I looked anxiously to see how thoroughly the European sparrow would do the work for which it has been transported over thousands of miles of land and water. But it was very seldom that any of the numerous individuals that have harbored about me for the past several years ever went near the patch; occasionally one of the young would fly down and take a worm, but I never saw a full-grown individual take one.

By accident I was observing the patch early in the morning, from day-break to a short time after sun-rise, when I chanced to find a number of chipping sparrows (*Spizella socialis* Bon.), taking worms as busily as possible. By continuing my observations I found this was the case every *morning* as long as the worms lasted; but during the rest of the day "chippy" was seldom seen in the patch. Whether this early feeding is the natural habit of this species, or whether it was not allowed to go about the premises during the rest of the day, I cannot say. But it did such efficient work that I feel it my duty to make it as widely known as possible.—*S. Schneck, M.D., Mt. Carmel, Ill.*

DEPREDATIONS OF THE EUROPEAN SPARROW.—The following case, represented to me by Dr. A. K. Fisher, of Sing Sing, N. Y., substantiates one of the many charges brought against *Passer domesticus.*

"About a year ago I was interested in watching a sparrow pulling up peas in a neighbor's garden. The peas were up about an inch; the bird went along the row, taking the vines in his bill, placing his foot near the roots and pulling up the shoots and eating the peas. I saw him thus destroy several, when I stopped him by throwing a stone which unluckily missed him.

"The old saying that 'Birds of a feather flock together' is verified in the case of the sparrow's associates. The only bird which I have ever found which seemed to enjoy the company of the English sparrow, is that miserable form of bird life, the *Molothrus ater.* It would be difficut to find two more disreputable birds than this precious pair. Here they mix together a good deal, especially when the sparrows are a little way out of the village."—*Elliott Coues, Washington, D. C.*

ON THE TORPIDITY OF ANIMALS.—Some time in early December, 1878, when the snow first began to fly, a silver-haired bat, without a place to lie dormant in for the winter, flew into my hallway, about nine in the evening, at Evanston, Ill. I was surprised at discovering a bat at that time of year, and secured it in a box. It was a bitter cold night and the bat hung himself up by its claws on the edge of the box among the cotton and went into a torpid state. Several days afterward I placed him over the fire and thawed him out. He became quite lively in the warmth, took a drop of water and flew around the room. The following night was the coldest of the season, and it again went into a torpid state and remained some two weeks in that condition before it was disturbed. My efforts to bring it to life on this occasion were not so successful as formerly. After much warming it came to sufficiently so that two spots of breath would appear on the mirror when held to it. In order to get a greater amount of heat to operate on it, I placed the box containing it on the fancy top of the stove, turned my back to it and became engaged in writing. I had written some time when my attention was aroused to a bad scent in the room. I turned around but to behold box and bat wrapped in flames. This ended my experiments in that direction, I had arrived at the following conclusions, however: That animals in a torpid state may be aroused by an application of heat; or, in other words, torpidity is but a state of lowered temperature of the body. I am strengthened in this conclusion by some observations of no little importance to the topic under consideration.

The torpidity of swallows has long been regarded as a tradition, but traditions are generally founded on fact, however perverted the facts may be. A young man, whose word I regard in all matters as perfectly trustworthy, told me that one April day while out gunning, he treed a coon. He borrowed an axe and as the tree was falling a half-bushel of swallows rolled out from the hollow. In the warm sun of the early spring day many of these took life, and consequently wings, and flew away. And why not!

Last winter the papers were prolific with stories about the resuscitation of sheep, cows, and even men, from a frozen state. Indeed, it is no secret of late years that the heat generated by a dog will easily bring to its natural state a frozen limb of a man. I noticed this fact in the South, the overflow of the Mississippi river leaves thousands of little ponds full of fishes, which in winter freeze up solidly. The fishes are confined in the ice. When these ponds thaw out, in spring, the fishes are liberated and go sporting about immediately. Fishes, of course, are cold-blooded and may not be affected by the ice. The fact remains, however, that during the winter a party of us were mapping the Mississippi, about Cairo, in Illinois, Kentucky, and Missouri, and that each day these fishes could be seen, frozen stiff, in the ice, many of which we cut out and examied, and from all appearances, were as dead as the logs that strewed the ground. But with the approach of warm weather, they were as lively as ever.

The only instance, in any way, against the above observations occurred in the great Marshes of Lake Erie. During a severe winter the mud and water froze to a great depth. The consequence was that when the marshes thawed out the shallows were covered with dead turtles, snakes, frogs, etc. The unanimous opinion of the Corps of Engineers was, that the cause of this wholesale slaughter of the reptiles was some poison permeating the marshes, doubtless generated by the slow approach of spring. There may be such a thing as being frozen too effectually, however, for a good condition of torpidity. As a final instance I may note the return of frogs from their winter's quarters, at Camden, N. Y. Hundreds of these near this place came up from the earth in a shallow marsh, tumbling, leaping, and capering about, some of them appeared belly up, others with huge bags protruding from their mouths. They were all in a weak, half-sensible state, but gradually regained strength in the sunlight.

It is evident that animals do not assume a torpid state in warm weather, since no instance of the kind is known or recorded. The above instances seem therefore applicable to the previous conclusion that animals in a torpid state may be aroused by an increase of temperature, or in other words, torpidity is but a lowered temperature, sometimes to the freezing point.—*William Hosea Ballou.*

MIGRATION OF DRAGON FLIES.—On the 2d of June, in Weymouth, Mass., I observed what seemed to be a concerted migration of dragon flies, and should be glad to be informed whether such movements are of regular occurrence, and if they are, what is the explanation of them? I was sitting in a pasture near the edge of a wood (the wood being, perhaps, half a mile deep), at about eight o'clock in the morning, when I first became aware of what was going on. The flies came from over the trees, and generally on reaching the pasture, dropped to within five or ten feet of the ground, although many flew much higher and some went straight across the pasture at an estimated height of forty feet. All, with rare exceptions, kept a steady course due west, as though they were moving to some appointed rendezvous. They came in sight somewhat as waves come upon the beach—one minute there were none, and the next there were two or three or half a dozen together. I watched them for three hours or more, and in the afternoon followed in their train across two roads and some pasture lands to the edge of another wood. When they reached this wood they seemed, many of them, a little at a loss how to proceed, but soon mounted into the air and sailed over the trees out of sight. I then visited a small pond in the vicinity and took notice that they flew across it and kept on in their westerly course. As to the width of the column, I only know that it was at least a quarter of a mile. They were still flying at a little before eight o'clock in the evening, when it was almost too dark to see them. The two following days were cold and stormy, but on the 5th a few were still straggling across the fields.

On the evening of the 23d inst., while crossing Boston Common, I saw what seemed to be a similar migration, and in this case also the course was west.—*Bradford Torrey.*

TRICHODINA PARASITIC ON THE GILLS OF NECTURUS.—I have to record a new habitat for this interesting ectoparasitic genus of Infusoria. I was recently searching the gill-filaments of a Necturus (which had died a few hours before in the attempt to swallow a young catfish) for specimens of a Polystome which I have described as occurring there, when I noticed the remains of a considerable number of Infusoria belonging to this genus. Only the aboral end of the body with its hooks and chitinous frame remained, the softer oral end being already disintegrated. I did not succeed in identifying it with *T. pediculus*, the ectoparasite of Hydra, which has been so admirably described by James-Clark (Mem. Bost. Soc. Nat. Hist., Vol. I, No. 1), but it is possible that the examination of fresh specimens would prove it to belong to this species, which has also been indicated as occurring in the allantoid bladder of certain European newts (Busch, Müller's Archiv., 1855).

Since writing the above I have had the opportunity of examining a fresh Necturus with the result that its Vorticellidan parasite also occurs in the urinary bladder. It is identical with the Hydra parasite, *Trichodina pediculus.*—*R. Ramsay Wright, University College, Toronto.*

ZOÖLOGICAL NOTES.—The last number (3 of Vol. III, Part. I) of the Memoirs of the Boston Society of Natural History contains an elaborate essay, by S. H. Scudder, on the palæozoic cockroaches, being a complete revision of the species of both worlds, with an essay towards their classification. This work of 111 pages is illustrated by six excellent plates. It appears that the palæozoic cockroaches are, like many other groups of animals of the palæozoic age, old fashioned, obsolete forms which have been replaced by more modern types, and we may add that the existing cockroaches are to be congratulated that the shades of their ancestors have been thus recalled from their tombs and passed in review in a long and orderly procession.——Dr. Hagen is sanguine that noxious insects, such as the potato beetle, cotton worm and Rocky Mountain locust can be kept under, if not exterminated, by the use of yeast fungus; we hope that these fungi will take the place of Paris green as an insecticide, and trust another year to see experiments carried out upon an extensive scale; we know that myriads of insects, such as the house fly, are killed by fungi; why not myriads more, provided that the weather be sufficiently damp and warm for the growth of the fungus spores, a point not noticed by Dr. Hagen. In hot, dry weather the fungus would probably not have a deadly effect.——The attention of our readers has never been called to Baron Osten Sacken's second edition of the Catalogue of the described Diptera of North America, published about a year since by the Smithsonian Institution. It is invaluable as a work of reference.——American students in foreign laboratories do work of as high an order as their German, French or English fellow students of the same schools. No better work in embryology has been done than that comprised in Mr. C. O. Whitman's essay on the embryology of the little leech, Clepsine. We now draw attention to the able paper of two recent Princeton graduates, Messrs. Scott and Osborn, who have worked up the early development of the common European newt, published in the Quarterly Journal of Microscopic Science for July last, and now issued in pamphlet form.

ANTHROPOLOGY.[1]

RAU'S PALENQUE TABLET..—The latest contribution to knowledge issued by the Smithsonian Institution, is No. 331 of its publications, a quarto of seventy-six pages, by Dr. Charles Rau, on the Palenque Tablet in the United States National Museum. The contents of the work are as follows: "Chapter I.—History of the Palenque Tablet; Chapter II.—Explorations of Palenque; Chapter III.—The Temple of the Cross; Chapter IV.—The Group of the Cross; Chapter V.—Aboriginal writing in Mexico, Yucatan and Central America; Appendix.—Notes on the Ruins of Yucatan and Central America." In the first chapter we have a minute relation of the manner in which the tablet found its way from the Temple of the Cross to its present position in the National Museum. In the second chapter Dr. Rau gives a narration of the various explorations of these interesting ruins. The name Palenque is derived from a village about eight miles away, called Santo Domingo del Palenque. The ruins were discovered in 1750, by a party of Spaniards, and surveyed for the first time by order of Ramon de Ordoñez in 1773–1784. The first exploration which lead to any result was that of Capt. Antonio del Rio in 1787; his manuscript was published in London, in 1822, with drawings from Castañeda, the artist of Dupaix. Capt. William Dupaix, in 1808, visited Palenque, with an artist named Castañeda. The MSS. and drawings will be found in Vols. IV, V, VI, of Kingsborough. Baron de Waldeck lived two years at Palenque making surveys and sketches, 1832–4. His plates, with text by De Bourbourg, was published in Paris, in 1866, by the French Government.

When Dupaix visited Palenque the three slabs constituting the Group of the Cross were all in place. But at the time of Waldeck's visit, the right one, now called the Smithsonian Tablet,

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[1] Edited by Prof. OTIS T. MASON, Columbian College, Washington, D. C.